[0766] Other data desired by the system would be if possible an input to tell the user how many users are present (if more than one is comprehended). And is there one hand or two?

[0767] This brings up another point and that is how to tell the system that some exception is present or some situation where you would either call up an exception routine or ignore the data and retry. Exceptions can be

[0768] Obscured or partially obscured datums. A datum image can be compared with a pre-stored criteria, or previously observed results and indications to the operator or automatic signaling of alternate datum programs be made if conditions warrant.

[0769] Confused datums, one behind the other, one hand visible instead of two, one person visible instead of two.

[0770] Datum indistinct or suspicious. One can go through a routine to check different aspects of shape if required

[0771] Data taking too long to determine existence or position. Possible, look at redundant datum?

[0772] Wrong targets are present. The object is not what it was told it was supposed to be? A precheck either manually, or assisted by the TV camera computer system of the invention, of the targets on an object to make sure that they match what the database is supposed to be, to assure both the object is the right one, and I or the targets are correct is desirable

[0773] A given range of motions of a object or person is not in the range of motions that has been programmed. In this case a warning to slow down can be given, or suggestions made to speed up the system, such as increase light intensity, target brightness, etc. A motion first check could be done for example by waving ones arms in a certain way that would cause the computer to either register a particular user or the motion captured algorithm to be used or a speed parameter or anything to do with the camera and a light gathering. Ideally a first user should go through a simple training or at least a setup routine where they did certain actions and movements and other things in the range that they expect to use and let the camera system set up to that where possible

[0774] Down load of sensor information from storage media or remote sources via the internet and the like.

[0775] It is possible to download from an Internet website direct to the computer using known connection technology. Although what is interesting here is to further discuss two other alternatives and that is downloading from the website optically based cues for the function of the target based sensors of this system. In other words, allowing them to change their operational characteristics and not just the characteristics of the activity involving the data obtained using them. In addition, and software agent from a computer at one end of a link can be sent out and determine characteristics and optimize/ make systems at other end work with the first one (and not just for this inventions). This could also be of use for control of video cameras generally

[0776] "'Light' as used herein, can be electromagnetic waves at x-ray through infra-red wavelengths.

Specialized Definitions Used in the Application

[0777] Target Volume

[0778] A "target Volume" is the volume of space (usually a rectangular solid volume) visible to a video camera or a set of video cameras within which a target will be acquired and its position and/or orientation computed.

[0779] Interrupt Member

[0780] An "Interrupt member" is a device that senses a signal to the systems computer allowing a computer program to identify the beginning of one path of a target and the end of the preceding path. It can also identify a function, object, or parameter value. Examples of an Interrupt member are:

[0781] 1. A given key on the system's keyboard.

[0782] 2. A voice recognition system capable of acting on a sound or spoken word.

[0783] 3. A button attached to a game port, serial port, parallel port, special input card, or other input port.

[0784] 4. A trigger, switch, dial, etc. that can turn on a light or mechanically make visible a new target or sub-target with unique properties of color, shape, and size.

[0785] Quant

[0786] A "Quant" is a unique discretized or quantized target path (defined by location, orientation, and time information) together with the target's unique identification number (ID). A Quant has an associated ID (identification number). A Quant is composed of a sequence of simple path segments. An example of a Quant that could be used to define command in a CAD drawing system to create a rectangle might be a target sweep to the right punctuated with a short stationary pause followed by an up sweep and pause, a left sweep and pause, a down sweep and pause, and finally ended with a key press on the keyboard. In this example the Quant is stored as a set (4, 1, 2, 3, 4, a, 27) where 4 is the number of path segments, 1-4 are number that identify path segment directions (i.e. right, up, left, down), "a" is the member interrupt (the key press a), and 27 is the target ID. Note that the punctuation that identifies a new path direction could have been a radical change in path direction or target orientation or speed.

[0787] Light as used herein includes all electro-magnetic wavelengths from ultraviolet to near infrared

What is claimed is:

1. Apparatus for input by a person of data to a computer having a display comprising

One or more Datum means provided on said person, said datum means distinguishable in reflected light

At least one TV Camera having an output

Means for determining from said TV camera output, the position of said datums and/or the orientation of a portion of said person